

CT/BR2004/000114

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 H02P23/00 H02P27/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H02P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 325 037 A (JEONG JAE H) 28 June 1994 (1994-06-28) column 5, line 20 - line 34; claim 1; figures 3,5	1,11, 18-28
X	EP 0 312 686 A (GULTON IND INC) 26 April 1989 (1989-04-26)	1,11,18
Y	column 7, line 46 - column 8, line 32; claim 1; figures 2-4,6	10,30-32
Y	US 5 450 521 A (REDLICH ROBERT W) 12 September 1995 (1995-09-12) cited in the application column 1, line 8; claim 1	10,30-32
A	US 6 280 147 B1 (RYAN LIAM ET AL) 28 August 2001 (2001-08-28) column 4, line 61 - line 63; figure 5 column 5, line 54 - line 57	1,11,18

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the International search

14 October 2004

Date of mailing of the International search report

27/10/2004

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US 5325037	A	28-06-1994	KR 9306378 B1 JP 5252793 A	14-07-1993 28-09-1993
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US 6280147	B1	28-08-2001	US 6174136 B1 WO 0179693 A2 EP 1121529 A2 JP 2002527669 T WO 0022298 A2	16-01-2001 25-10-2001 08-08-2001 27-08-2002 20-04-2000